THE SPECIFIC STATUS OF *TRAPEZITES PRAXEDES* (PLÖTZ) (LEPIDOPTERA: HESPERIIDAE): PREVIOUSLY CONSIDERED TO BE A SUBSPECIES OF *T. MAHETA* (HEWITSON)

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Abstract

Trapezites praxedes (Plötz) is shown to be a species distinct from *T. maheta* (Hewitson) based on morphology of the adults and immature stages. Both species are sympatrically distributed over part of their range in southeastern Queensland and northeastern New South Wales.

Introduction

Two subspecies of *Trapezites maheta* (Hewitson) (Hesperiidae) have previously been recognised from eastern Australia.

Hewitson (1877) described *Hesperia maheta* from Queensland and Plötz (1884) described a similar taxon, *Telesto praxedes,* from Port Jackson (Sydney, New South Wales). Waterhouse (1932) and Evans (1949) considered *praxedes* to be the southern subspecies of *T. maheta,* an arrangement followed by recent authors including Common and Waterhouse (1981).

During the past ten years specimens considered to be *T. maheta* and *T. praxedes* have been collected at the same localities in southeastern Queensland and northeastern New South Wales (Fig. 1). An examination of the morphology of adults and immature stages has revealed that the two taxa represent different species.

One of us (Sands) has examined the male genitalia from the holotypes of *Hesperia maheta* in the British Museum (Natural History) and *Telesto praxedes* in the Zoologisches Museum of the Humboldt University, Berlin, East Germany. These observations confirm that the holotypes of *maheta* and *praxedes* represent distinct species.

Trapezites maheta (Hewitson)

(Figs 2, 3, 6, 8-19)

Hesperia maheta Hewitson, 1877; p. 80.
Trapezites maheta (Hewitson), Meyrick and Lower 1902, p. 89, Waterhouse 1903, pp. 54-56.
Trapezites maheta maheta (Hewitson), Waterhouse 1932, p. 220; 1937, p. 112; Evans 1949, p. 209; Common and Waterhouse 1981, p. 114.

Type. – *Holotype* ♂ labelled "Queensland" in British Museum (Natural History), London.

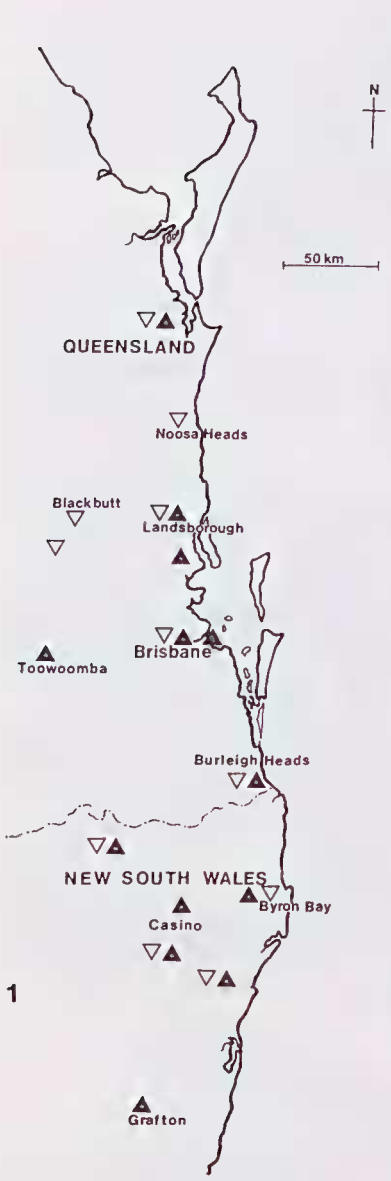


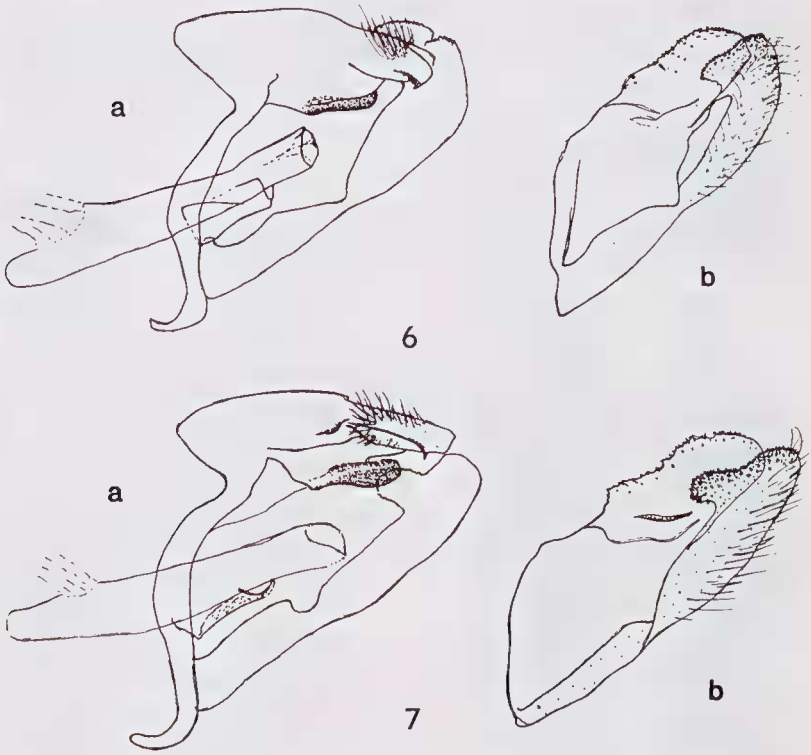
Fig. 1. Sympatric distribution of two *Trapezites* spp. in eastern Australia; (▲) *T. maheta* (Hewitson), (△) *T. praxedes* (Plötz).

Figs 2-5. *Trapezites* spp. undersides: (2, 3) *T. maheta* (Hewitson), (4, 5) *T. praxedes* (Plötz); (2, 4) males, (3, 5) females.

Trapezites praxedes (Plötz)
(Figs 4, 5, 7, 20-31)

Telesto praxedes Plötz, 1884, p. 378.
Telesto phlaea Plötz, 1884, p. 378: syn. Waterhouse 1903, pp. 54, 55.
Trapezites maheta praxedes (Plötz), Waterhouse 1932, p. 220; 1937, p. 112; Evans 1949, p. 209; Common and Waterhouse 1981, pp. 113, 114.

Type.– *Holotype* ♂ labelled "praxedes Pl type", "praxedes 5065 type", "Port Jackson Leach" in the Zoologisches Museum, Humboldt University, Berlin.



Figs 6-7. Male genitalia: (6) *T. maheta* (Hewitson), holotype; (7) *T. praxedes* (Plötz). (a) with near valva removed. (b) valva, slide mounted.

Distinguishing characters

Adult males of the two species differ in size, *T. praxedes* being usually larger than *T. maheta* (Table 1). However, *T. praxedes* specimens from southern New South Wales are not as large as northern populations and these do not differ significantly in size from *T. maheta.* The colour of the upper side of the

two species is somewhat variable, but beneath both sexes of *T. maheta* (Figs 2, 3) are paler than *T. praxedes* (Figs 4, 5). Beneath, the apex of the fore wing and the ground colour of the hind wing differs in both sexes of the two species: in *T. praxedes* these areas are uniform purple-brown whereas in *T. maheta* they are variegated grey-brown. Moreover, the costal area beneath is darker than the subterminal area in *T. maheta* but is the same colour in *T. praxedes.* On the hind wing of males of *T. maheta* an area corresponding to the orange median band above is distinctly grey-orange whereas this is only slightly paler than the ground colour of *T. praxedes.* A useful character which enables separation of males of the two species is the size and position of the two median spots on the hind wing beneath. The anterior spot in *T. maheta* is larger and rounded, averaging 1.72 mm (n = 10) whereas in *T. praxedes,* it is often crescentic and averages 1.11 mm (n = 10) when measured between the base and termen. The two median silvery spots are more basally located in *T. maheta* than in *T. praxedes,* and with their size differences these constitute the best characters for separating worn specimens. The row of hind wing postmedian spots, which diminish in size towards the apex, tends to be better developed in *T. maheta* than in *T. praxedes,* and two ringed subapical spots, present in male specimens of *T. maheta,* are often small or absent in *T. praxedes.*

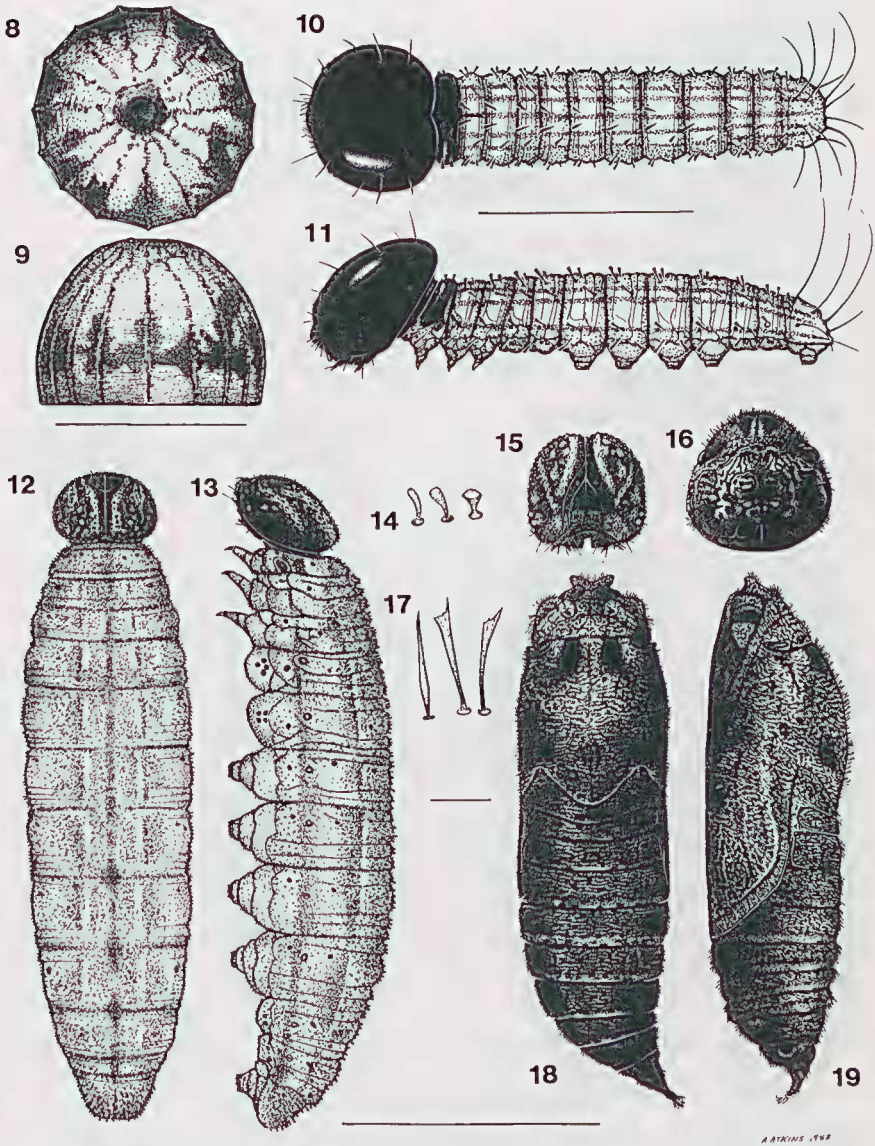
TABLE 1

Fore wing lengths and ratio of measurements of valvae from the genitalia of male *Trapezites* spp. from southeastern Queensland (n = 10 each sp.)

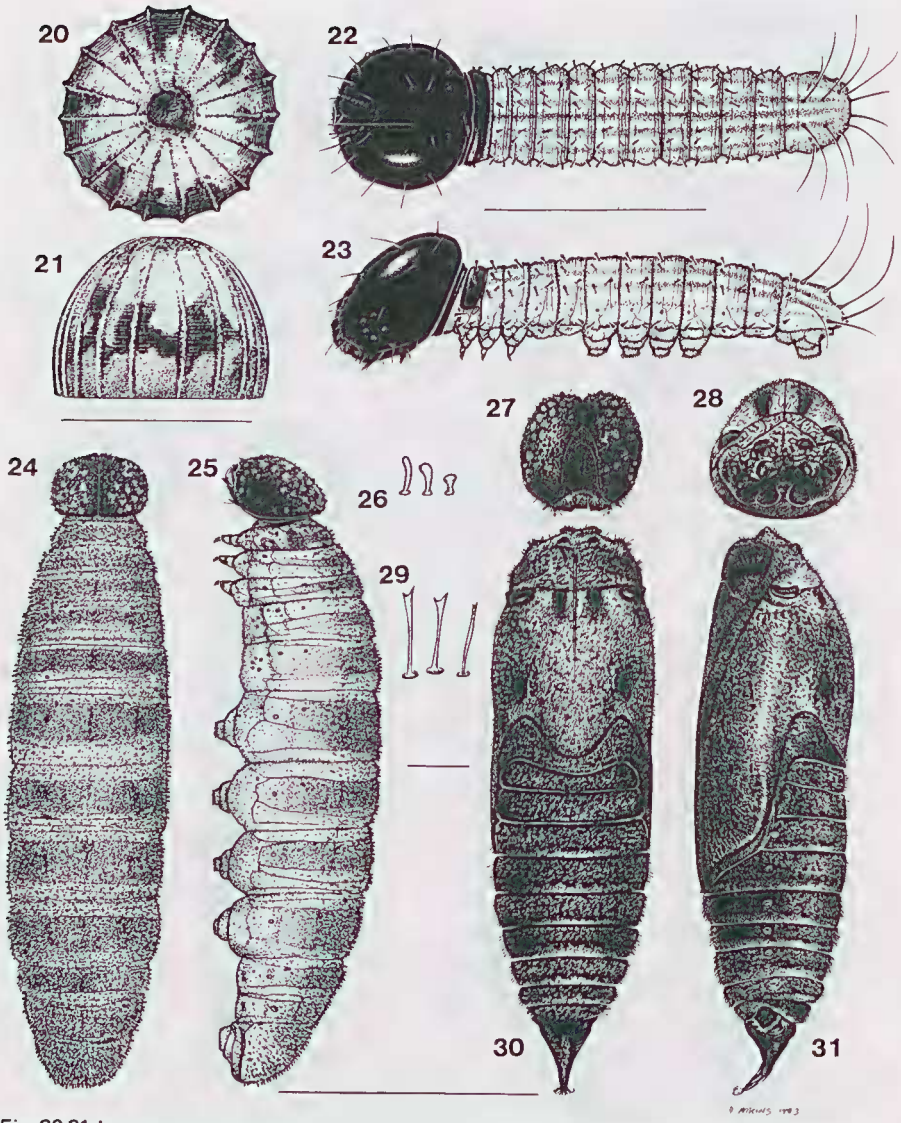
	Fore wing length (mm)			Valva ratio width/length		
	Mean	Range	± S.E.	Mean	Range	± S.E.
T. praxedes	16.9	15.8-19.2	0.137	0.376	0.360-0.390	0.005
T. maheta	14.9	13.9-15.6	0.209	0.428	0.403-0.447	0.008

The valvae of the male genitalia differ considerably in their relative widths (Table 1) and in shape (Figs 6, 7). In *T. praxedes* the inner ventral fold, or harpe is developed with an upturned, subapical rounded lobe, whereas in *T. maheta* the dorsal edge of the harpe is not produced and the proximal edge is subtriangular, not rounded. Both species have the gnathos typically developed as two, broad ridges covered in granulation. However, in *T. praxedes* they are apically swollen and rounded whereas in *T. maheta* they are weakly convex. No differences in the female genitalia of the two species were observed.

There are also differences between immature stages of the two species: the eggs of *T. maheta* have an average of 15 vertical ribs (Figs 8, 9) while in *T. praxedes* there are an average of 19 (Figs 20, 21). First instar larvae of



Figs 8-19. Immature stages of *Trapezites maheta* (Hewitson) from Casino, N.S.W.: (8, 9) egg, dorsal and lateral; (10, 11) first instar larva, dorsal and lateral (12, 13) mature larva, dorsal and lateral; (14) setae of mature larva; (15) head of final instar larva; (16) pupal cap; (17) setae of pupa; (18, 19) pupa, dorsal and lateral.



Figs 20-31. Immature stages of *Trapezites praxedes* (Plötz) from Casino, N.S.W.: (20, 21) egg, dorsal and lateral; (22, 23) first instar larva, dorsal and lateral (24, 25) mature larva, dorsal and lateral; (26) setae of mature larva; (27) head of final instar larva; (28) pupal cap; (29) setae of pupa; (30, 31) pupa, dorsal and lateral.

both species (Figs 10, 11, 22, 23) are pale green with 3 dorsal, longitudinal stripes, but areas of pale brown are present at the base of the setae in *T. praxedes.* The second to fifth instar larvae are pinkish-grey to olive green with prominent brown dorsal stripes in *T. maheta* (Figs 12, 13), but are uniform reddish-brown with inconspicuous stripes in *T. praxedes* (Figs 24, 25). The head possesses light brown stripes in *T. maheta* (Fig. 15) but in *T. praxedes* (Fig. 27) the head is dark brown with lighter brown dorsal spots.

The cremaster of the pupa is shorter and blunter and the pupal cap is more developed in *T. maheta* (Figs 16, 18, 19) than in *T. praxedes* (Figs 28, 30, 31). Both the setae of the mature larvae and the pupae differ in shape between the two species (Figs 14, 17, 26, 29).

Distribution

Both species occur sympatrically from Cooloola, southeastern Queensland to Grafton in northern New South Wales. *T. praxedes* extends its range to eastern Victoria and *T. maheta* to Kuranda and the Atherton Tablelands (Common and Waterhouse, 1981).

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